

CLAIMS

1. (original) An article of manufacture for detecting motion comprising:

a substrate comprising a plurality of volumes of material, wherein each volume is capable of transmitting light from at least a first location on a first surface of the substrate to at least a second location on the first surface.
2. (original) The article of claim 1, wherein the material is capable of transmitting UV light, IR light, visible light, and combinations thereof.
3. (original) The article of claim 2, wherein the plurality of volumes are capable of transmitting light from a plurality of locations to a single location, from a single location to a plurality of locations, and combinations thereof.
4. (original) The article of claim 3, wherein the volumes are capable of transmitting light from a single surface or a plurality of surfaces.
5. (original) The article of claim 3, wherein volumes are capable of transmitting light to a single surface or a plurality of surfaces.
6. (original) The article of claim 1, wherein the material and the substrate are the same material and wherein the volumes are separated from the substrate along at least a portion of their length by a refractive index boundary.
7. (original) An article of manufacture comprising:

a motion detector comprising a substrate with a first surface, and at least one volume of material contained within the substrate and adapted to transmit light from at least a first location on the first surface to at least a second location.
8. (original) The article of claim 7 wherein the motion detector is selected from the group consisting of pre-fabricated wall, ceiling and flooring tiles, made in place tiles, other floor coverings, façade panels, pavers, bricks, siding, roofing, glass blocks, concrete blocks, furniture panels, cabinetry panels, countertops, fabrics, rugs, carpets, wall coverings, room partitions, furniture, upholstery, window treatments, lighting fixtures, billboards, signage, displays, lane dividers, approaching object alerts, parking

guides, fountains, aquariums, fish tanks, tubs, pools, spas, credit cards, business cards, mouse pads, novelty items and combinations thereof.

9. (original) The article of claim 8, further comprising an external, non-ambient light source.

10. (original) The article of claim 9, wherein the light source is a source of UV light, IR light, visible light, or combinations thereof.

11. (original) A method of making an article of manufacture, comprising:

creating a refractive index boundary between a material and a substrate to form at least one light pipe contained within the substrate, wherein the light pipe is capable of transmitting light from at least a first location on a surface of the substrate to a second location on the surface of the substrate.

12. (original) The method of claim 11, wherein the creating step comprises:

casting an uncured substrate material, having a first refractive index, around the transparent material, having a second refractive index.

13. (original) The method of claim 12, wherein the substrate is selected from concrete, plastics, silicones, thermoplastics, thermosets, ceramics, composites and combinations thereof.

14. (original) The method of claim 12, wherein the casting step further comprises embedding the material in an uncured substrate material or placing the uncured substrate around a network of pre-formed light pipes.

15. (original) The method of claim 11, wherein the creating step comprises:

cutting at least one light pipe into a mass of the transparent material to form the refractive index boundary between the light pipe and the remainder of the mass of transparent material.

16. (original) The method of claim 11, wherein the creating step comprises:
combining at least one light pipe with a plurality of fibers to form a fabric.

17. (original) The method of claim 16, wherein the combining step comprises forming a woven fabric, a non-woven fabric, and combinations thereof.

18. (currently amended) A light distributing material, comprising:
at least one light pipe having a first end pointing in a first direction and a second end pointing in a second direction;

a matrix formed about the light pipe into which the light pipe is embedded so that the first end is substantially coplanar and flush with a first exposed surface of the matrix, the light pipe extends at least partially through and are surrounded over at least a portion of its length by the matrix and the second end is substantially coplanar and flush with a second exposed surface of the matrix, wherein the first and second directions are not opposed to each other,

wherein light inputted into a first end of the light pipe is guided along the light pipe and emitted at the second end of the light pipe.

19. (original) The material of claim 17, wherein the first exposed surface and the second exposed surface are selected from a first surface that is coplanar with the second surface, a first surface that is parallel with the second surface or a first surface that lies in a plane different from the plane of the second surface, and combinations thereof.

20. (currently amended) The material of claim 19, wherein the matrix is concrete and the light pipes reinforce the concrete in tension and are made of ~~is an~~ acrylic with a portion that is substantially cylindrical over a portion of its length.

21. (currently amended) A method of transmitting information, comprising:
transmitting light through a plurality of light pipes in a substrate, wherein at least one light pipe transmits light from at least a first location on a surface of the substrate to at least a second location; and

interfering with the transmission of light through the light pipe before the light enters the light pipe at the first location~~arrives at the second location~~.

22. (original) The method of claim 21, wherein an object in motion is used to interfere with the transmission of light through the light pipe.